

ASCE

1977

COMBINED INDEX







*Journals (Proceedings)
Civil Engineering,
Transactions,
Manuals and Reports,
and
Special Publications*

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INDEX TO 1977 ASCE PUBLICATIONS

FOREWORD

The 1977 index, which provides a guide to information published by ASCE during 1977, combines material appearing in the Journals (Proceedings Vol. 103), CIVIL ENGINEERING (Vol. 47), Transactions (Vol. 142), Manuals and Reports, and Special Publications.

The user will find all articles and papers dealing with specific subject areas listed under one or more appropriate subject headings suggested by the content and application of the paper. The Engineers Joint Council "Thesaurus of Engineering Terms" has been used as the primary source of index terms. The Water Resources Thesaurus of the U.S. Department of the Interior and the Micro-Thesaurus compiled by the Soil Mechanics and Foundations Division of ASCE were also used.

The Index can be used in conjunction with the information-retrieval cards printed in the front of each Journal and to the rear of CIVIL ENGINEERING. The bold key words on the information-retrieval cards are the words used as index terms in the 1977 Index.

The name index contains entries indexed under the names of author, co-authors, discussers, chairmen of committees preparing reports, and deceased members whose memoirs appeared in Transactions.

In the name index, the entry for a Proceedings Paper (under the first name if more than one author) is supplemented by information concerning the discussion, closure, and Transactions digest, if applicable. To find what discussion, if any, there has been for a Proceedings Paper located in the subject index, the reader looks under the entry for the first-named author in the name index. When discussion of a paper from a prior year is published, the original entry is repeated. Discussion over a period of time can be traced until the closure to the paper is located.

When the paper appears in Transactions, the complete entry including original paper, discussion, closure, errata (if applicable), and Transactions citation appears in the name index.

Typical abbreviations used herein are:

Dsc for discussion

Clo for closing discussion

Corr for corrections

Err for errata

Chmn for Chairman of a committee submitting a report
TR for Transactions
TN for Technical Note

Items indexed from ASCE Special Publications have the following symbols in the references:

1. UT-76—Urban Transportation Efficiency, Specialty Conference of the Urban Transportation Division, July 26-27, 1976
2. CE15—Proceedings of the Fifteenth Conference on Coastal Engineering, 1976
3. PAC77—Specialty Conference on Ethics, Professionalism and Maintaining Competence, March 10-11, 1977, Columbus, Ohio
4. WW77A—Ports '77. Specialty Conference of the Waterway, Port, Coastal and Ocean Division, March 9-11, 1977, Long Beach, Calif.
5. ETH75—Conference on Engineering Ethics, May 18-19, 1975, Baltimore, Md.
6. PROD—The Civil Engineer's Role in Productivity in the Construction Industry, Vol. 2, 1976
7. RM16—Design Methods in Rock Mechanics, 16th Symposium on Rock Mechanics, September 22-24, 1975, Minneapolis, Minn.
8. GT77—Geotechnical Practice for Disposal of Solid Waste Materials, Specialty Conference of the Geotechnical Engineering Division, June 13-15, 1977, Ann Arbor, Mich.
9. GTAW—Award-Winning ASCE Papers in Geotechnical Engineering, 1950-1959, 1977
10. EM77—Advances in Civil Engineering Through Engineering Mechanics, 2nd Annual Engineering Mechanics Specialty Conference, North Carolina State Univ., May 23-25, 1977, Raleigh, N.C.
11. EFLA—Land Application of Residual Materials, Engineering Foundation Conference, September 26-Oct. 1, 1976, Easton, Md.
12. GT76—Rock Engineering for Foundation and Slopes, Specialty Conference of the Geotechnical Engineering Division, Boulder, Colo., August 16-18, 1976, Vol. II.
13. EFGS—Shotcrete for Ground Support, Engineering Foundation Conference, October 4-8, 1976, Easton, Md.
14. IR77—Water Management for Irrigation and Drainage, Specialty Conference of the Irrigation and Drainage Division, July 20-22, 1977, Reno, Nev.
15. EFCAUD—Guide for Collection, Analysis, and Use of Urban Stormwater Data, Engineering Foundation Conference, Nov. 28-Dec. 3, 1976, Easton, Md.
16. SCCB—State-of-the-Art Report on Composite or Mixed Steel Concrete Construction for Buildings, 1977

17. HY77—Hydraulics in the Coastal Zone, Specialty Conference of the Hydraulics Division, August 10-12, 1977, College Station, Texas
18. LE77—The Current State of Knowledge of Lifeline Earthquake Engineering, Specialty Conference of the Technical Council on Lifeline Earthquake Engineering, August 30-31, 1977, Los Angeles, Calif.
19. EFEDS—The Evaluation of Dam Safety, Engineering Foundation Conference, November 28-December 3, 1976, Pacific Grove, Calif.
20. AT77—1977 International Air Transportation Conference, April 3-6, 1977, Washington, D.C.
21. CS77—Coastal Sediments '77, Specialty Conference of the Waterway, Port, Coastal and Ocean Division, November 2-4, 1977, Charleston, S.C.
22. STC—International Colloquium on Stability of Structures Under Static and Dynamic Loads, May 17-19, 1977, Washington, D.C.

Preprints are indicated by the words Preprint and the preprint number and date. They were presented at ASCE National Meetings as follows:

<i>Preprints</i>	<i>Meeting</i>	<i>City</i>	<i>Date</i>
2822-2911	National Convention	Dallas, Texas	April 25-29, 1977
2912-3104	National Convention and Exposition	San Francisco, Calif.	Oct. 17-21, 1977

Journal Abbreviations: Construction (CO), Engineering Mechanics (EM), Environmental Engineering (EE), Geotechnical Engineering (GT), Hydraulics (HY), Irrigation and Drainage (IR), Power (PO), Structural (ST), Surveying and Mapping (SU), Technical Councils (TC), Transportation Engineering (TE), Urban Planning and Development (UP), Waterway, Port, Coastal and Ocean Engineering (WW), Water Resources Planning and Management (WR). Papers sponsored by the Department of Professional Activities appear in "Engineering Issues—Journal of Professional Activities" and are identified by the symbols (EI). Papers appearing in the Transportation Engineering Journal of ASCE include papers approved by the Aerospace, Air Transport, Highway, Pipeline and Urban Transportation Divisions. Papers appearing in the Journal of the Technical Councils of ASCE include papers approved by the Technical Councils on Codes and Standards, Computer Practices, Lifeline Earthquake Engineering, and Research.

The original publication can be found from the index entry as follows: Papers appearing in the Journals (Proceedings) are listed as:

GT9:Sept 77:935:13223

which would indicate a paper published in the Journal of the Geotechnical Engineering Division, September 1977 on page 935, as Proceedings Paper 13223.

The Transactions entry

TR:142:452

indicates that the Digest appears in Transactions, Volume 142, on page 452.

Articles and news items published in CIVIL ENGINEERING are represented as:

CE:May 77:79

Which states that the article appeared in CIVIL ENGINEERING in the May 1977 issue on page 79.

In addition to articles, the following Departments of CIVIL ENGINEERING are indexed: ASCE News, Engineers Notebook, The Readers Write, and The Younger Viewpoint.

Items indexed from Vol. 103 (1977) of the Journals are identified by months. The number of Journals published by a Division in 1977 can be obtained from the number after the last Division abbreviation i.e., GT12, Dec. 1977 identifies the twelfth issue of the Journal of the Geotechnical Engineering Division. The complete list of paper numbers and Journals for 1977 is as follows:

Month	Paper Numbers	CO	EM	EE	EI	GT	HY	IR	PO	ST	SU	TC	TE	UP	WW	WR
Jan.	12649-12701					1	1	1		1			1			
Feb.	12702-12762		1	1		2	2			2					1	
Mar.	12763-12827	1				3	3	1		3			2			
Apr.	12828-12894		2	2	2	4	4			4						
May	12895-12955					5	5			5			3	2	1	
June	12956-13023	2	3	3		6	6	2		6						
July	13024-13091				3	7	7		1	7			4	1		
Aug.	13092-13162		4	4		8	8			8					3	
Sept.	13163-13242	3				9	9	3		9	1		5			
Oct.	13243-13306		5	5	4	10	10			10						
Nov.	13307-13372					11	11			11			6	4	2	
Dec.	13373-13447	4	6	6		12	12	4		12		1				

This annual index has been composed using magnetic tapes of all 1977 entries. To make future issues more useful, interested persons should submit their suggestions for further improvement to:

Information Services

ASCE

345 East 47th Street

New York, New York 10017

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Field Impregnation Techniques for Highway Concrete, Wai F. Chen, Harshavardhan C. Mehta, John A. Manson and John W. Vanderhoff, TE3: May 77:355:12904

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Short Span Bridge Superstructural Systems, Hota V.S. Gangarao and Narendra B. Taly, Preprint No.2839, Apr 77, 30pp.

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Strength of Steel Box-Girder Bridges, Patrick J. Dowling, ST9:Sept 75:1929:11550

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 Dynamic Response Method for Structural Evaluation, Otto C. Guedelhoefer, III, Jack R. Janney and John F. Wiss, Preprint No.3096, Oct 77, 18pp.
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Hydrodynamic Pressure in Semicylindrical Reservoir, Francisco J. Sanchez-Sesma and Emilio Rosenbluth, EM5:Oct 77:913:13298

Practical Rock Foundation Design for Dams (English Translation), Pierre G. Londe and Bernard Tardieu, RM16:Sept 75:115

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1976 Big Thompson Flood and Flood Recovery Planning. Larry A. Muller and Patrick F. Mulhern, Preprint No.3105, Oct 77, 27pp.

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Disaster Response to 1973 Mississippi River Flood. Robert I. Kaufman, Preprint No.3046, Oct 77, 29pp.

Evaluation Guidelines for Spillway Adequacy (Bureau of Reclamation). Gerald W. Kirkpatrick, EFEDS:Nov 76:395

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Floods Predicted From Rainfall Frequencies. Lee Robinson and Theodore T. Williams, HY10:Oct 72:1773:9294

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Design and Construction Requirements for Hurricane-Resistant Construction. Herbert S. Saffir, Preprint No.2830, Apr 77, 16pp.

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Disaster Response to 1973 Mississippi River Flood, Robert I. Kaufman, Preprint No.3046, Oct 77, 29pp.

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Hydrologic Impacts of Land Use Decisions, Lawrence R. Molsather, Leonard J. Kremer and Dennis E. Palmer, Preprint No.2999, Oct 77, 27pp. Integrated River System Operation in a Major Flood,

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Modeling Subsidence Due to Geothermal Fluid Production, Marcelo J. Lippmann, T. N. Narasimhan and Paul A. Witherspoon, Preprint No.3107, Oct 77, 25pp.

Potential Use of Heat Storage Wells for Energy Conservation, Raphael G. Kazmann, Preprint No.2824, Apr 77, 16pp.

Putting Alternative Sources of Energy Into Perspective, R. A. Budenholzer and Zalman Lavan, CE:Jan 77:71

Solar, Geothermal, Hydrogen and Hydraulic Power, Frederick F. Hall, Preprint No.2869, Apr 77, 28pp.

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Geomorphology of the Southern Coast of Alaska, Miles O. Hayes, Christopher H. Ruby, Michael F. Stephen and Stephen J. Wilson, CE15:July 76:1992

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Optimal Cropping Pattern for Basin in India, Venkatachalapathy Lakshminarayana and Sama Parthasarathy Rajagopalan, IR1:Mar 77:53:12803

Structural Model Study of MAPP-1 Containment, Tamirisa V.S.R. Apparao, Rangaswami Narayanan, G. Paul Joseph and M. A. Khuddus, EM77:May 77:109

Indonesia

Human Settlement Projects and Impacts in Jakarta (Abstract), Brian Ellis, Preprint No.2920, Oct 77, 1pp.

Industrial Growth

Design/Construct Companies — Builders for Industry, Kneeland A. Godfrey, Jr., CE:Oct 77:131 Economic Role of the Waterway in Western Europe, Maurice Marchal, WW3:Aug 76:337:12346

Industrial Plants

Fundamental Concept of Aseismic Design of Earthquake Resistant Lifeline Systems and Industrial Facilities, Heki Shibata and Masahiko Tsuchiya, LET7:Aug 77:354

Perception of Ride Sharing Programs by Industry, Lester A. Hoel and Moreland Herrin, UT-76:July 76:119

Spill Control in a Petrochemical Plant, L. E. Carlson, J. F. Erdmann and G. J. Hanks, Jr., Preprint No.2849, Apr 77, 30pp.

The 3M Commute-a-Van Program, Robert D. Owens and Helen L. Sever, UT-76:July 76:146

Industrial Wastes

Analytical Model of Dispersion in Tidal Fjords, Shu T. Wang, Alan F. McMillan and Bih H. Chen, HY7:July 77:737:13073

Are Cities Doing Enough to Remove Cancer-Causing Chemicals From Drinking Water?, Eugene E. Dallaire, CE:Sept 77:88

Coal Pile Leachate—Quantity and Quality Characteristics, William C. Anderson and Mark P. Youngstrom, EE6:Dec 76:1239:12626

Cyanide Waste Disposal Site Neutralization, Kenneth H. Kastman and R. Eric Zimmerman, GT77:June 77:831

Dye Catalyzed Oxidation of Industrial Wastes, Jerome W. Sargent and Robert L. Sanks, EE5:Oct 76:879:12453

Energy Recovery in Brewery Industry, Iraj Kormi and John D. Keenan, EE3:June 77:445:13001

Engineering Properties Affecting Disposal of Red Muds, Frank Somogyi and Donald H. Gray, GT77: June 77:1

Engineering Properties of FGD Sludges, D. Joseph Haggerty, C. Robert Ullrich and Barry K. Thacker, GT77:June 77:23

The Fate of Heavy Metals from Metal Finishing — Land Disposal of Solid Waste, L. E. Lancy, EFLA: Sept 76:61

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Flow Pattern Control by Entrainment Regulation, W. Hall C. Maxwell and Misganaw Demissie, HY10: Oct 77:1121:13271

Geotechnical Aspects of Papermill Sludge Disposal, Richard E. Wardwell, Stanley E. Walker and James S. Atwell, GT77:June 77:756

Geotechnical Behavior of Solvay Process Wastes, Fred H. Kulhawy, Dwight A. Sangrey and C. Sherman Grove, Jr., GT77:June 77:118

Geotechnical Practices for Disposal of Solid Waste Materials, Donald H. Gray, CHmn., 885 pp.

Hazardous Waste Management and Disposal — Industrial, Nolan A. Curry, EFLA:Sept 76:17

Integrated Solutions to Tailings Disposal, Michael J. Taylor and E. D'Appolonia, GT77:June 77:301

Jarrett Branch Industrial Waste Landfill — A Case History, James H. Poellot and William J. Curtis, GT77:June 77:285

Land Application of High Nitrogen Industrial Wastewater, George E. Brown, Preprint No.2878, Apr 77, 14pp.

Physical Properties of Pb-Zn Mine-Process Wastes, Deborah L. Mabes, James H. Hardcastle and Roy E. Williams, GT77:June 77:103

Regulation of Industrial Solid Waste Management in Texas, Dick Whittington, Preprint No.2900, Apr 77, 7pp.

Removal of Heavy Metals from Industrial Effluents, Jim V. Rouse, EE5:Oct 76:929:12447

Spill Control in a Petrochemical Plant, L. E. Carlson, J. F. Erdmann and G. J. Hanks, Jr., Preprint No.2849, Apr 77, 30pp.

Time Settlement Characteristics of Milled Urban Refuse, Wayne W.H. Chen, R. Eric Zimmerman and A. G. Franklin, GT77:June 77:136

Waste Clay Dewatering and Disposal, Leslie G. Bromwell and Thomas P. Oxford, GT77:June 77: 541

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Industrial Waste Treatment

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Land Application of High Nitrogen Industrial Wastewater, George E. Brown, Preprint No.2878, Apr 77, 14pp.

Spill Control in a Petrochemical Plant, L. E. Carlson, J. F. Erdmann and G. J. Hanks, Jr., Preprint No.2849, Apr 77, 30pp.

Inelastic Action

Inelastic Buckling of Simply Supported Steel I-Beams, Sritawat Kitipornchai and Nicholas S. Trahair, ST7:July 75:1333:11419

Inelastic Response to Site-Modified Ground Motions, Robert V. Whitman and John N. Protonotarios, GT10:Oct 77:1037:13269

Inelastic Spatial Stability of Restrained Beam-Columns, Sriramulu Vinnakota and Pentti Aystö, ST11:Nov 74:2235:10919

Local Unloading in Piecewise-Linear Plasticity, Osvaldo De Donato and Giulio Maier, EM3:June 76:383:12170

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RC Beam-Column Joints under Large Load Reversals, Duane L.N. Lee, James K. Wight and Robert D. Hanson, ST12:Dec 77:2337:13405

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Drag and Inertia Forces on a Cylinder in Periodic Flow, C. J. Garrison, John B. Field and Michael D. May, WW2:May 77:193:12913

Inertial Forces

Wave Forces on Submerged Objects, Suphat Vongvisessomjai and Richard Silvester, CE15:July 76:2387

Inertial Navigation

Geodetic Applications of Inertial Navigation Systems, Edward F. Roof, Preprint No.2888, Apr 77, 30pp.

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Infiltration-Inflow Analysis, David J. Cesareo and Richard Field, EES:Oct 75:775:11645

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Local Erosion Caused by Rapid Forced Infiltration, Brian B. Willerts and Michael E. Drossos, HY12: Dec 75:1477:11796

Management Model for Wastewater Disposal on Land, Albert Koenig and Daniel P. Loucks, EE2: Apr 77:181:12870

Pore Pressure Effects in Inelastic Constitutive Formulations for Fissured Rock Masses, James R. Rice, EM77:May 77:295

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Urban Storm Runoff Model, Edward W. Rovey and David A. Woolhiser, HY11:Nov 77:1339:13369

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Analysis of Swelling-Soil Column Infiltration Test, Jacob Uzan, TN: GT9:Sept 76:1014:12367

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Infiltration Into Increasingly Permeable Soils, Herman Bouwer, IR1:Mar 76:127:11959

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Infiltration-Inflow Analysis, David J. Cesareo and Richard Field, EES:Oct 75:775:11645

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Information

Current and Proposed Construction Research Studies, John D. Borcherding and Brennan P. Hatley, CO3: Sept 76:547:12423

Information Retrieval

Bibliography on Discharge Measurement Techniques, Leslie J. Hooper, Chmn., HY8:Aug 77:889:13141

California Water and Power Earthquake Engineering Forum, Le Val Lund, LE77:Aug 77:459

Computer Cartography Offers County Unlimited Combinations and Considerable Savings, Vern Cartwright and Joseph P. Alessandri, CE:Nov 76:60 Computer Mapping and Automating Geographic Information: New Tools for the Civil Engineer, Jack Dangermond, Preprint No.2894, Apr 77, 28pp.

Construction Information Systems in Romania, Daniel W. Halpin and Nicolai Tutos, CO2:June 76: 335:12176

Contractor Attitudes Toward Construction R & D, Richard L. Tucker and John D. Borcherding, CO3: Sept 77:465:13217

Land Data Management System for Resource Planning, Stuart G. Welsh, Lois A. Kawatski and Paul J. Clavette, WR2:Nov 77:177:13323

Waste Clearinghouse Promotes Recycling Efforts, Robert L. Harness, Joseph Eigner and Roland S. Marquart, CE:Mar 77:71

Information Retrieval Effectiveness

Computer-Aided Environmental Impact Analysis Systems, Ravinder K. Jain and Ronald D. Webster, Preprint No.2842, Apr 77, 28pp.

Information Seeking

Bibliography on Discharge Measurement Techniques, Leslie J. Hooper, Chmn., HY8:Aug 77:889:13141

Computer-Aided Environmental Impact Analysis Systems, Ravinder K. Jain and Ronald D. Webster, Preprint No.2842, Apr 77, 28pp.

Environmental Planning Via Low-Cost Computer Technology, Ravinder K. Jain, Ronald D. Webster and Rikki L. Welsh, Preprint No.2949, Oct 77, 18pp.

Information System Design

Computer Mapping and Automating Geographic Information: New Tools for the Civil Engineer, Jack Dangermond, Preprint No.2894, Apr 77, 28pp.

Information Systems

Computer-Aided Environmental Impact Analysis, Ravinder K. Jain and Ronald D. Webster, WR2: Nov 77:257:13346

Construction Labor Cost Measurement and Control, Walter E. Ulrich, Jr., CO3:Sept 77:329:13207

Environmental Data Management, George K. Young and G. F. Tierney, WR2:Nov 76:255:12559

Environmental Planning Via Low-Cost Computer Technology, Ravinder K. Jain, Ronald D. Webster and Rikki L. Welsh, Preprint No.2949, Oct 77, 18pp.

Information System for Transportation Energy, Vasily Kousoulas, Raymond E. Goodson and Jeffrey L. Staley, TE5:Sept 77:635:13220

Philadelphia's Water Systems Automation Plan, Carmen F. Guarino, Joseph V. Radziul, Alan Hess, Patrick R. Cairo, Robert E. Day and John J. Smith, Jr., EES:Oct 76:953:12473

Toward the Development of Multipurpose Cadastral Systems, John D. McLaughlin and James L. Clapp, SU1:Sept 77:53:13237

Infrared Heating
Urban Energy Surveys Using Thermal Imagery, J. E. Colcord, Preprint No.2955, Oct 77, 24pp.

Infrared Photography
On-Farm Drainage Design Procedures Used by ADS, Inc., George M. True, IR77:July 77:1-14

Infrared Scanners
Evaluation of Air-Sea Interface Heat Flux, Robert L. Street and A. Woodruff Miller, Jr., CE15:July 76: 3208

Infrared Scanning
Evaluation of Air-Sea Interface Heat Flux, Robert L. Street and A. Woodruff Miller, Jr., CE15:July 76: 3208

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Initiation Sequence — Vital Element of Open Pit Blast Design, T. N. Hagan, RM16:Sept 75:345

Injection
Compaction Grouting — A Significant Case History, James Warner, Preprint No.2933, Oct 77, 13pp.

Epoxy-Repaired Bolted Timber Connections, R. Richard Avent, Leroy Z. Emkin, Robert H. Howard and Charles L. Chapman, ST4:Apr 76:821: 12061

Inland Waterways
Today's Northwest Passage, Richard A. Kaden and Roney A. Heinz, CE:June 76:41

Inlets (Waterways)
Barnegat Inlet, Nature Prevails, Lewis A. Caccese and Henry R. Spies, CS77:Nov 77:305
Beach Haven and Little Egg Inlets, A Case Study, Joseph T. DeAlteris, Thomas McKinney and James Roney, CE15:July 76:1881
Capacity of Inlet Outer Bars to Store Sand, Todd L. Walton, Jr. and William D. Adams, CE15:July 76: 1919
Changes in Inlet Offset due to Stabilization, Dennis K. Hubbard, CE15:July 76:1812
Characteristics and Behavior of Pacific Coast Tidal Inlets, Joe W. Johnson, WW3:Aug 73:325:9927
Characteristics of Tidal Inlets on the Pacific Coast of Japan, Toshiyuki Shigemura, CE15:July 76:1666
Coastal Engineering Study of Ocean City Inlet, Maryland, Robert G. Dean and Marc Perlin, CS77: Nov 77:520
A Comparative Review of Sand Transfer Systems at Florida's Tidal Entrances, C. P. Jones and Ashish J. Mehta, CS77:Nov 77:48
Comparison of Numerical Simulation Flow Models for Coastal Inlets, Jerry L. Machemehl and T. C. Gopalakrishnan, HY77:Aug 77:1
Computation of Flow through Masonboro Inlet, N.C., Michael Amein, WW1:Feb 75:93:11124
Computer-Aided Photo Studies of Inlet Stability, John H. Barwise, Frederick C. Perry and Victor E. LaGarde, CS77:Nov 77:1057
Corpus Christi Water Exchange Pass 1972-1976, E. William Behrens and Richard L. Watson, CS77: Nov 77:790
Design of Tidal Inlets on Littoral Drift Shores, Per Moiler Bruun, CS77:Nov 77:927
Development of Kiawah Island, South Carolina, Miles O. Hayes, CS77:Nov 77:828
Factors Influencing Tidal Inlet Throat Geometry, Duncan M. Fitzgerald and S. A. Fitzgerald, CS77: Nov 77:563

Harbour Inlets on Tidal Estuaries, Hans Vollmers, CE15:July 76:1854
Increasing the Mean Current in Coastal Channels, Jacobus van de Kreeke, WW2:May 76:223:12157
Inlet Changes of the East Frisian Islands, Gunter Luck, CE15:July 76:1938
Inlet Interaction and Stability Theory Verification, Martin T. Czerniak, CS77:Nov 77:754
Lake Worth Inlet — Case Study, James R. Walker and James W. Dunham, CS77:Nov 77:602
Measurement of Bed Friction in Tidal Inlets, Ashish J. Mehta, R. J. Byrne and Joseph T. DeAlteris, CE15:July 76:1701
Minimizing Wave Transmission Through Jetted Inlets, John C. Robarge, HY77:Aug 77:121
Modification of Sand Transport in Tidal Inlets, Steven L. Costa and John D. Isaacs, CS77:Nov 77: 946
Morphologic Equilibrium of a Natural Tidal Inlet, CS77:Nov 77:734
Nearshore Changes at Jetted Inlets, Texas Coast, Robert A. Morton, CS77:Nov 77:267
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Review of Models of Tidal Waters, Jon B. Hinwood and Ian G. Wallis, HY11:Nov 75:1405:11693
Sand Circulation Pattern at Price Inlet, South Carolina, Duncan M. Fitzgerald, Dag Nummedal and Timothy W. Kana, CE15:July 76:1868
Stability of Dunedin and Hurricane Passes, Florida, Michael A. Lynch-Blosser and Richard A. Davis, Jr., CS77:Nov 77:774
A Study of the Effects of Inlet Stabilization at St. Marys Entrance, Florida, Erik J. Olsen, CS77:Nov 77:311
Suspended Sediment Transport Near Tidal Inlets, Emin Ozsoy, CS77:Nov 77:914
Systems for Bypassing Sand at Coastal Inlets, Thomas W. Richardson, CS77:Nov 77:67
Tidal Inlet Flow Dynamics and Sediment Movement, Jerry L. Machemehl, N. E. Bird and A. N. Chambers, CE15:July 76:1681
Tidal Inlets of the Southern Gulf of St. Lawrence, Canada, S. B. McCann, G. E. Reinson and W. Armon, CS77:Nov 77:504
Tidal Inlet Variability — Cape Hatteras to Cape Canaveral, Dag Nummedal, George F. Oertel, Dennis K. Hubbard and Albert C. Hine, CS77:Nov 77:543
Tidal Jet Flows Near Inlets, Umit A. Unluata and Emin Ozsoy, HY77:Aug 77:90
Tidal Prism of Equilibrium Inlets, Muthusamy Krishnamurthy, WW4:Nov 77:423:13315

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Innovation and the Changing Role of the Engineer, W. James King and Donald McDonald, TE3:May 77:409:12940
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Capabilities of the Private Engineering Sector for Dam Safety, Richard D. Harza, EFEDS:Nov 76:473

Construction Management of Washington Metro, Roy T. Dodge, Preprint No.2997, Oct 77, 15pp.

Contractor Quality Control, Joseph C. Dean, Robert I. Carr and Walter L. Meyer, CO3:Sept 76:535:12422

Dam Safety Guidelines — Responsibility and Liability, William A. Wahler, EFEDS:Nov 76:479

Decision-Making for Ordinary Foundations on Rock, Raymond P. Miller, GT76:Aug 76:II-22

A Design Approach for Noninspectable Structures, J. P. Gallagher and H. A. Wood, Preprint No.2865, Apr 77, 24pp.

Design, Construction and Inspection of Pipeline River and Stream Crossings, Hugh W. O'Donnell, Preprint No.2963, Oct 77, 29pp.

Dynamic Response Method for Structural Evaluation, Otto C. Guedelhoefer, III, Jack R. Janney and John F. Wiss, Preprint No.3096, Oct 77, 18pp.

Engineers, Ethics and Economics, K. Vandivier, ETH75:May 75:20

EPA's New Construction Operations Review Program, John T. Rhett and Elliot Tucker, CE:May 77:76

Evaluation of Seepage Stability of Dams, Harry R. Cedergren, EFEDS:Nov 76:195

Exterior Girder Design in Highway Bridges, Henry L. Kinnier and Furman W. Barton, Preprint No.2972, Oct 77, 10pp.

Forest Service Safety of Dams Studies, J. A. Wolfe, EFEDS:Nov 76:147

How to Evaluate Bridges for Overloads — ASAP, Kenneth R. White and John Minor, Preprint No.2827, Apr 77, 11pp.

Important Research Needs in Metal Structures, John E. Bower, Preprint No.3032, Oct 77, 30pp.

Latent Stability Deficiencies, David C. Ralston, EFEDS:Nov 76:269

Preliminary Experiences with the ACD/MCD Bridge Inspection System, John R. Barton and Anthony Leone, Preprint No.2904, Apr 77, 36pp.

Proposed Additions to Inspection Guidelines, Deslog Brown, EFEDS:Nov 76:463

Quality Control of Thermoplastic Waterstop Joints, Edward R. Fisk, CO1:Mar 77:39:12786

Recommended Standards for the Responsibility, Authority, and Behavior of the Inspector, Joseph Goldblum, Chmn., CO2:June 75:359:11384

A State's View of the Recommended Inspection Guidelines, A. Kenneth Dunn, EFEDS:Nov 76:156

Status of Dam Safety — Status Report on Public Law 92-367, Samuel H. Miles, EFEDS:Nov 76:3

Strengthening and Repair of Existing Structures, Stephenson B. Barnes, Preprint No.2936, Oct 77, 28pp.

The Submersible as a Pipeline Tool, Henry L. Koenig, Preprint No.3019, Oct 77, 10pp.

Summary — Failure and Near Failure, Michael J. Taylor, EFEDS:Nov 76:69

Summary — Safety of Dams, Arthur C. Martin, Jr., EFEDS:Nov 76:173

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Cross-Hole and Down-Hole Vs by Mechanical Impulse, Bruce Auld, GT12:Dec 77:1381:13397

Design of an Orifice Coefficient Meter, A. Akers, EM77:May 77:543

Dynamic Response Method for Structural Evaluation, Otto C. Guedelhoefer, III, Jack R. Janney and John F. Wiss, Preprint No.3096, Oct 77, 18pp.

Earthquake Response and Instrumentation of Buildings, Christopher Rojahn and Ralph B. Matthesen, TC1:Dec 77:1:13393

Effect of Chemical Solidification of Soils Around a Shallow Tunnel — A Case Study, G. Wayne Clough, Wallace H. Baker, D. Y. Tan and William M. Kuck, Preprint No.3006, Oct 77, 30pp.

Grouting Instrumentation — Old River Low Sill Structures, James M. Polatty and Donnie L. Ainsworth, Preprint No.2916, Oct 77, 8pp.

In Situ Soils Measuring Devices — Part II, CE:Dec 75:73

Instrumentation for Stochastic Hydraulics, Lan-Yin Li and Hsieh Wen Shen, Preprint No.2875, Apr 77, 30pp.

Mica Dam Embankment Stress Analysis, Nigel A. Skinner, GT3:Mar 75:229:11162

Modified Soil Strain Gage, Arthur E. Lord, Jr. and Robert M. Koerner, TN: GT7:July 77:789:13031

Performance of a Cellular Wharf, Warren L. Schroeder, Dennis K. Marker and Thanasarn Khayairernpanish, GT3:Mar 77:153:12790

Practical Application of Minicomputers in Full-Scale Structural Testing, Suresh G. Pinjarkar and Otto C. Guedelhoefer, III, Preprint No.3045, Oct 77, 19pp.

State of California Strong Motion Instrumentation Program, Tom W. Wootton, LE77:Aug 77:378

Summary — Safety of Dams, Arthur C. Martin, Jr., EFEDS:Nov 76:173

Tunnel Instrumentation, H. B. Voort, EFSGS:Oct 76:713

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Insuring Wetlands, James R. Dorsey, Preprint No.2952, Oct 77, 23pp.

Liability Claims Against Soils Firms Slashed Dramatically, CE:Aug 77:67

Reducing Construction Accidents—Top Management's Role, Raymond E. Levitt and Henry W. Parker, CO3:Sept 76:465:12384

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Determination of Flood Levels on the Pacific Northwest Coast for Federal Insurance Studies, Dennis E. Dorrataague, John H. Humphrey and R. David Black, HY77:Aug 77:73

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Flow Patterns Around Submerged Intake Structures for Power Plants, Kanwar S. Satija and Yin-Ben Dai, HY77:Aug 77:37

Intake Screenwell Surging Caused by Wave Dynamics, Yun-Jui Tsai, Yung-Chi Chang and D. M. Crocker, HY77:Aug 77:58

Wave Pressures on Large Circular Cylindrical Structure, Hiroshi Nakamura, CE15:July 76:2290

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Application of a Sediment Transport Model, C. A. Fleming and J. N. Hunt, CE15:July 76:1184

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Three-Dimensional Fracture Mechanics Analysis, Thomas A. Cruse and Gerald J. Meyers, ST2:Feb 77:309:12750

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Computer Interactive Graphics and the Distinct Element Method, Peter A. Cundall, GT76:Aug 76: II-193

Dynamic Plastic Response of Floating Beams, Dusan Krajcinovic and M. G. Srinivasan, EM77:May 77: 431

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Seismic Response of a Periodic Array of Structures, Hidenori Murakami and Juan Enrique Luco, EM5: Oct 77:965:13278

Seismic SSI of Nuclear Power Plant Structures, Izzat M. Idriess and Khosrow Sadigh, GT7:July 76:663: 12246

Simplified N-Dimensional Interaction Surfaces, Thomas A. Duffey and Howard L. Schreyer, ST7: July 76:1291:12230

Structural Grouting for Oroville Dam Coreblock, John E. O'Rourke, GT5:May 77:367:12905

Ultimate Strength of Tubular Beam-Column, Arnold L. Wagner, Wendelin H. Mueller and Hacik Erzurumlu, ST1:Jan 77:9:12670

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Masjid (Mosque) Designing, Altaf Hussain, UP1:Aug 76:177:12349

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Hydrologic Impacts of Land Use Decisions, Lawrence R. Molsather, Leonard J. Kremer and Dennis E. Palmer, Preprint No.2999, Oct 77, 27pp.

Lake Quality Mapping from LANDSAT Multispectral Analysis, James P. Scherz, Preprint No.2940, Oct 77, 17pp.

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Some Features of Wind Action on Shallow Lakes, Robert B. Banks, EES:Oct 75:813:11640

Survey of Numerical Models for Wind-Driven Lake Circulation, Ralph Ta-shun Cheng, Preprint No.3058, Oct 77, 30pp.

Transient Finite Element Shallow Lake Circulation, Frank D.L. Young and James A. Liggett, HY2:Feb 77:109:12741

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Urban Runoff Control Master Planning, Murray B. McPherson, Preprint No.2825, Apr 77, 19pp.

Urban Runoff Pollution and Water Quality Planning, William Whipple, Jr., Preprint No.3091, Oct 77, 25pp.

Urban Sediment Problems: A Statement on Scope, Research, Legislation and Education, Harold P. Guy, Chmn., HY4:Apr 75:329:11256

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Bibliography and Data on Cable-Stayed Bridges, Chris S.C. Yiu, Chmn., ST10:Oct 77:1971:13286

Free-Form Arch Dam Design System, Walter Stensel and G. Gerry, ST4:Apr 75:795:11222

Model for Layout and Design of Sewer Systems, Larry W. Mays, Harry G. Wenzel, Jr. and Jon C. Liebman, WR2:Nov 76:385:12580

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Design of Plastics Structural Components — Synopsis and Outline of Proposed ASCE Manual of Engineering Practice, Frank J. Heger, Richard E. Chambers and Albert G.H. Dietz, Preprint No.3078, Oct 77, 29pp.

Field Impregnation Techniques for Highway Concrete, Wai F. Chen, Harshavardhan C. Mehta, John A. Manson and John W. Vanderhoff, TE3: May 77:355:12904

High-Strength Field Polymer Modified Concretes, Edward G. Navy, Maurice M. Udakide and John A. Sauer, ST12:Dec 77:2307:13404

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US/USSR Studies on Polymers for Canal Construction, L. O. Timblin, Jr., Preprint No.2880, Apr 77, 25pp.

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Texas Uses Fabric to Protect Pavement from Cracks, Paul H. Coleman, CE:Dec 77:74

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King Post Truss System Cuts Roof Framing Cost by 30%, Charles H. Thornton and Paul A. Gossen, CE:June 77:49

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A Model of Nutrient Uptake in Marsh Ecosystems, Lawrence A. Burns and R. Bruce Taylor, III, Preprint No.3056, Oct 77, 30pp.

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Centralization/Decentralization: Divergent Power Trends for the 21st Century, Harry E. Bovay, Jr., Preprint No.2873, Apr 77, 10pp.

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Tomorrow's Energy: Power from Inner and Outer Space, Jerry Grey, Preprint No.2858, Apr 77, 34pp.

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Texas Uses Fabric to Protect Pavement from Cracks, Paul H. Coleman, CE:Dec 77:74

Through the Years: History of Texas Land, Raymond Wisdom, Preprint No.2883, Apr 77, 18pp.

What's New in Dallas and Texas?, CE:Mar 77:64

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Repetitive Loading Tests on Membrane Enveloped Road Sections During Freeze Thaw, North Smith, Robert Eaton and John Stubstad, Preprint No.3011, Oct 77, 27pp.

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Center City Philadelphia Rail Commuter Connection, Walter Cherwony and H. Richard Orth, Preprint No.2926, Oct 77, 28pp.

Citizen Inputs to Public Works Projects, Desmond M. Connor, EI1:Jan 76:29:1856

Construction Economy: What Price Environmental Controls?, Harlan W. Fair, CO3:Sept 76:521:12427

Economic Measure of Benefits of Transportation, John F. Brothie, TE1:Feb 76:17:11888

Effects of BART on Work Journeys in the Bay Area, Alastair Sherret and Joel Markowitz, Preprint No.3094, Oct 77, 22pp.

Intergovernmental Guidance of Land Use and Growth, Bruce D. McDowell, UP1:Aug 76:15: 12319

Issues and Problems in Urban Planning, Tung Au, EI3:July 75:305:14117

Measuring Watershed Land-Use Changes with Airphotos, Donald B. Stafford, James T. Ligon and M. Eugene Nettles, TE1:Feb 76:117:11925

Modeling of Health Care Delivery, Jeng Wen Hwang and Milton E. Harr, UP1:Aug 76:157:12345

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Social Impacts of BART Service, David Minkus, Preprint No.3103, Oct 77, 18pp.

Solid Waste Management: Equity Trade-Off Models, Louis A. Fuertes, James F. Hudson and David H. Marks, UP2:Nov 74:155:10913

Summary of Land-Use Policy Papers, Charles B. Notess, UP1:Aug 76:147:12330

Trip Generation Analysis for Regional Studies, Arun Chatterjee, Donald R. Martinson and Kumares C. Sinha, TE6:Nov 77:825:13358

Urban Goods Movement: A Study Design, Arnim H. Meyburg and Peter R. Stopher, TE4:Nov 76:651: 12531

What's New in Dallas and Texas?, CE:Mar 77:64

1976 Big Thompson Flood and Flood Recovery Planning, Larry A. Muller and Patrick F. Mulhern, Preprint No.3105, Oct 77, 27pp.

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Back to the People: Dallas' Blueprint for the 21st Century, Michael J. McManus, CE:July 76:57

Human Settlement Projects and Impacts in Jakarta (Abstract), Brian Ellis, Preprint No.2920, Oct 77, 1pp.

The Impact of Tall Buildings on Large Urban Developments from the Viewpoint of the Structural Engineer: Peachtree Center and Renaissance Center, David I. Ruby, Preprint No.2881, Apr 77, 11pp.

Urban Sprawl

Use of an EIR Process in Controlling Urban Sprawl, Randolph M. Brodersen and Leonard Ortolano, UP1:Aug 76:199:12358

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Automatic Control Strategies for Urban Stormwater, Paul D. Trotta, John W. Labadie and Neil S. Grigg, HY12:Dec 77:1443:13396

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Research in Integrated Urban Traffic Management, William W. Wolman, Preprint No.2884, Apr 77, 11pp.

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Application of Levels of Service and Marketing in Public Transportation Planning, Kenneth W. Heathington, UT-76:July 76:177.

Better Use of City Streets, William F. Hoey, III, UT-76:July 76:333.

Bicycle Accidents in the City of Milwaukee, Zuhair Abou-Laghid, Arun Chatterjee and Kumares C. Sinha, TE2:May 76:347:12120.

Bicycles and Traffic, Harold C. Munn, TE4:Nov 75:753:11729.

Chicago Urban Transportation Planning, Harold E. Nelson and William L. Barnes, UP1:July 77:53:13075.

Conference Emphasis, Santosh Sharma, UT-76:July 76:77.

Conference Summary, Kumares C. Sinha, UT-76:July 76:1.

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Contribution to Selection of Railroad Ballast, Paul N. Gaskin and Gerald P. Raymond, TE2:May 76:377:12134.

Demand Model for Bus Network Design, Jende Hsu and Vasant H. Surti, TE3:Aug 76:451:12309.

Design of Transit Structures for Urban Areas, David G. Hammond and Drupad B. Desai, TE1:Feb 76:1:11918.

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Entropy Model and Intercity Modal Split in the UK, Gerald R. Leake and John R. Underwood, TE2:May 76:215:12110.

Facility Location Example of Evaluation Methodology, John S. Hoffman, TE4:Nov 75:817:11727.

Factors Affecting Reliability of Urban Bus Services, Brian P. Sterman and Joseph L. Schofer, TE1:Feb 76:147:11930.

The Impact of BART's Construction and Operations on Local Government Policy Decisions, Linda S. Graebner and Tom Higgins, Preprint No.3102, Oct 77, 26pp.

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Light Rail System Evaluation as an Alternative for the Detroit Region, Ramesh M. Khona and Robert J. Munchinski, Preprint No.3035, Oct 77, 29pp.

Light Rail Transit as a Means to Improved Urban Transport Efficiency, George R. Beetle, UT-76:July 76:270.

Modeling Social Impacts of Urban Highways, David C. Colony and Abul B. Shah Alam, TE2:May 76:395:12148.

Overview of Traffic Management Program of the Office of Service and Methods Demonstrations, Marvin Futrell, Jr., UT-76:July 76:281.

The Regional Economic and Fiscal Impacts of BART, Richard Grefe and Angus N. McDonald, Preprint No.3101, Oct 77, 23pp.

Sensitivity of Trip Distribution to Subarea Focusing, Nancy L. Nihan and Jacques Lassabliere, TE3:Aug 76:555:12317.

Social Impacts of BART Service, David Minkus, Preprint No.3103, Oct 77, 18pp.

State-of-the-Art of Ballastless Track at-Grade, Walter L. Wheeler, TE1:Feb 76:131:11929.

Traffic Generation from Land Development Proposals, Satish C. Sharma and Afifi H. Soliman, TE2:May 76:243:12153.

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Trip Generation as a Choice Process, Timothy J. Tardiff, TE2:Mar 77:337:12789.

Urban Travel Demand Models with Competitive Modes, Paul J. Ossenbruggen and Alex Li, TE3:Aug 76:585:12314.

Urban Travel Economic Costs, Marshall F. Reed, Jr., UT-76:July 76:68.

Use of Finite Element Analyses for Railcar Design, Michael J. Dennis, TE1:Feb 76:105:11921.

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Urban Warfare

Engineering of Public Systems, Gorman Gilbert and Jarir S. Dajani, EI1:Jan 75:15:11068.

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Protective Coatings — Prelude to Tomorrow, Herbert J. Schmidt, Jr., WW77:Mar 77:1-578.

U.S. Corps of Engineers

Investment in C.O.E. Recreation — Is It Worth It?, Lawrence W. Saunders, Preprint No.2989, Oct 77, 20pp.

Missouri River Prototype Measurements, Wayne G. Dorrough and Jack L. Mielke, Preprint No.3053, Oct 77, 30pp.

The PMF Concept, John T. Riedel, EFEDS:Nov 76:415.

Practical Experience with New Directions in Project Formulation, R. M. Thompson, IR77:July 77:II-156.

A State's View of the Recommended Inspection Guidelines, A. Kenneth Dunn, EFEDS:Nov 76:156.

Status of Dam Safety — Status Report on Public Law 92-367, Samuel H. Miles, EFEDS:Nov 76:3.

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Four-State Comparison of Models Used for Irrigation Management, R. J. Hanks, J. Ian Stewart and J. Paul Riley, IR77:July 77:I-283.

Stratified Flow in Great Salt Lake Culvert, Edward R. Holley and Kidd M. Waddell, HY7:July 76:969:12250.

Water Administration in Arid Utah, Dee C. Hansen and Jerry D. Olds, IR77:July 77:I-256.

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Hydrologic Impacts of Land Use Decisions, Lawrence R. Molssather, Leonard J. Kremer and Dennis E. Palmer, Preprint No.2999, Oct 77, 27pp.

Mitigating Earthquake Effects on Power Systems, Anshel J. Schiff and Donald E. Newsom, TC1:Dec 77:39:13390.

Nonassisted Private Suburban Development, Daniel B. Stauffer, UP1:July 77:1:13047.

A Review of the Earthquake Response and Aseismic Design of Underground Piping Systems, Teoman Ariman, LE77:Aug 77:282.

The Schuylkill River — A Major Crossing, Hertel C. Missimer, Preprint No.2831, Apr 77, 25pp.

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Structure of Utility-Based Evaluation Approaches, Feng-Bor Lin and Lester A. Hoel, TE2:Mar 77:307:12796

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